

Idaho National Engineering and Environmental Laboratory

Lessons Learned from the Pit 9 Retrieval Demonstration Project

Radioactive Waste Management Complex (RWMC) Remediation

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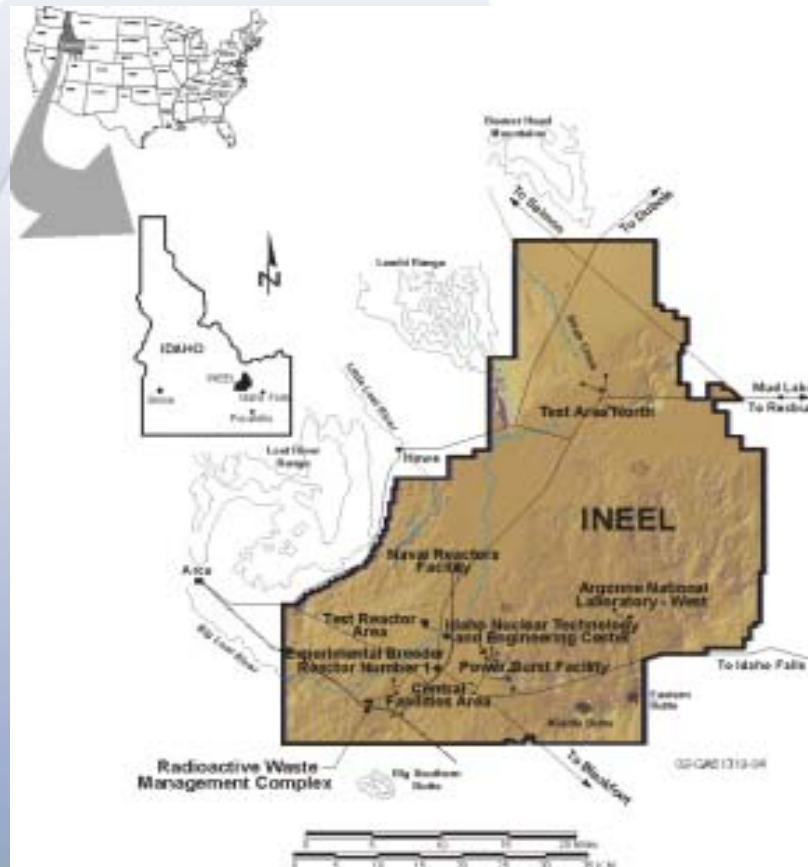
June 10, 2003



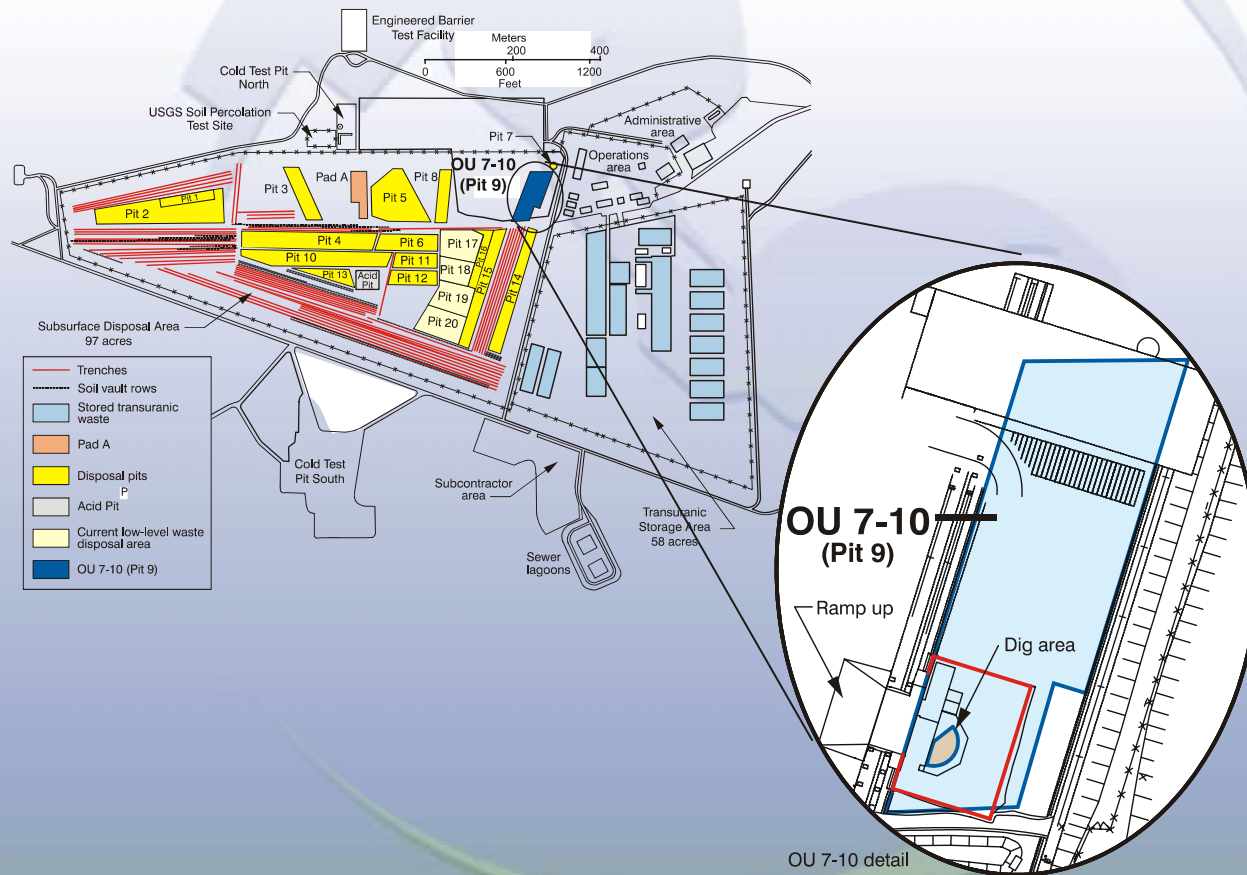
Pit 9 Retrieval Demonstration Project --Introduction

- *Pit 9 Retrieval Demonstration Project*
 - *Known as the Glovebox Excavator Method Project*
- *Topics:*
 - *Site Conditions*
 - *Project Structure*
 - *Facility Configuration and Operation*
 - *Lessons Learned and Noteworthy Practices*

Project Location



Pit 9 in the RWMC Subsurface Disposal Area



Three Stage Approach for the Remediation of Pit 9

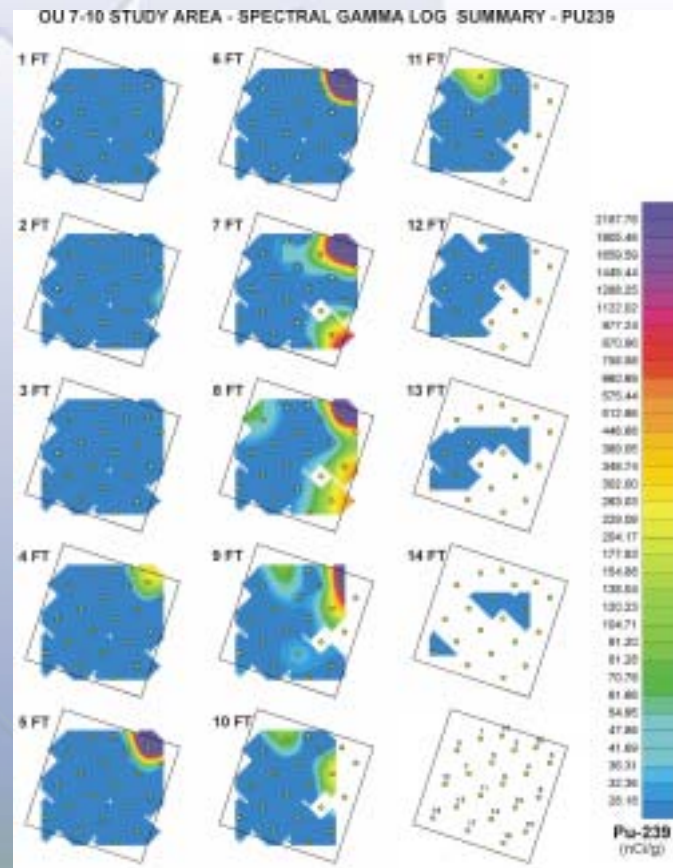
Defined by the 2nd Explanation of Significant Differences to the Record of Decision

- Stage I --- Subsurface Investigation*
- Stage II --- Small Scale Demonstration Excavation (~75 cu.yd.)*
- Stage III --- Full Remediation*

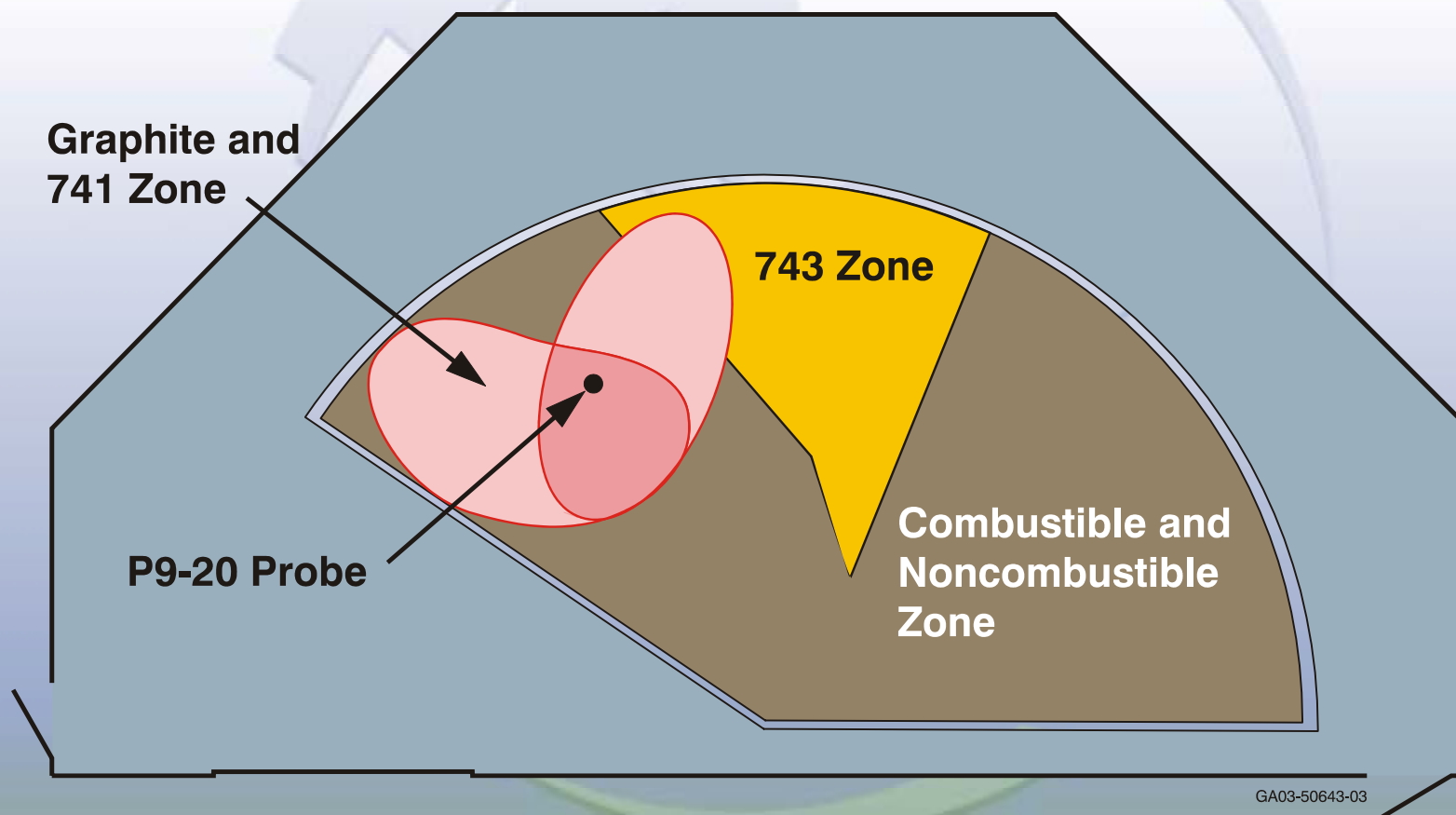
Stage I --- Subsurface Exploration

- *Active neutron-neutron log*
- *Passive gamma-ray log*
- *Passive neutron log*
- *Activated gamma-ray (n-gamma) log*
- *Azimuthal gamma*

Stage I --- Subsurface Exploration --- Spectral Gamma Log Summary



Stage I --- Subsurface Exploration --- Combined Waste Zone



Stage II---Glovebox Excavator Method Facility



Stage II---Glovebox Excavator Method Facility



Stage II---Glovebox Excavator Method Facility



Stage II---Glovebox Excavator Method Facility



Stage II---Glovebox Excavator Method Facility



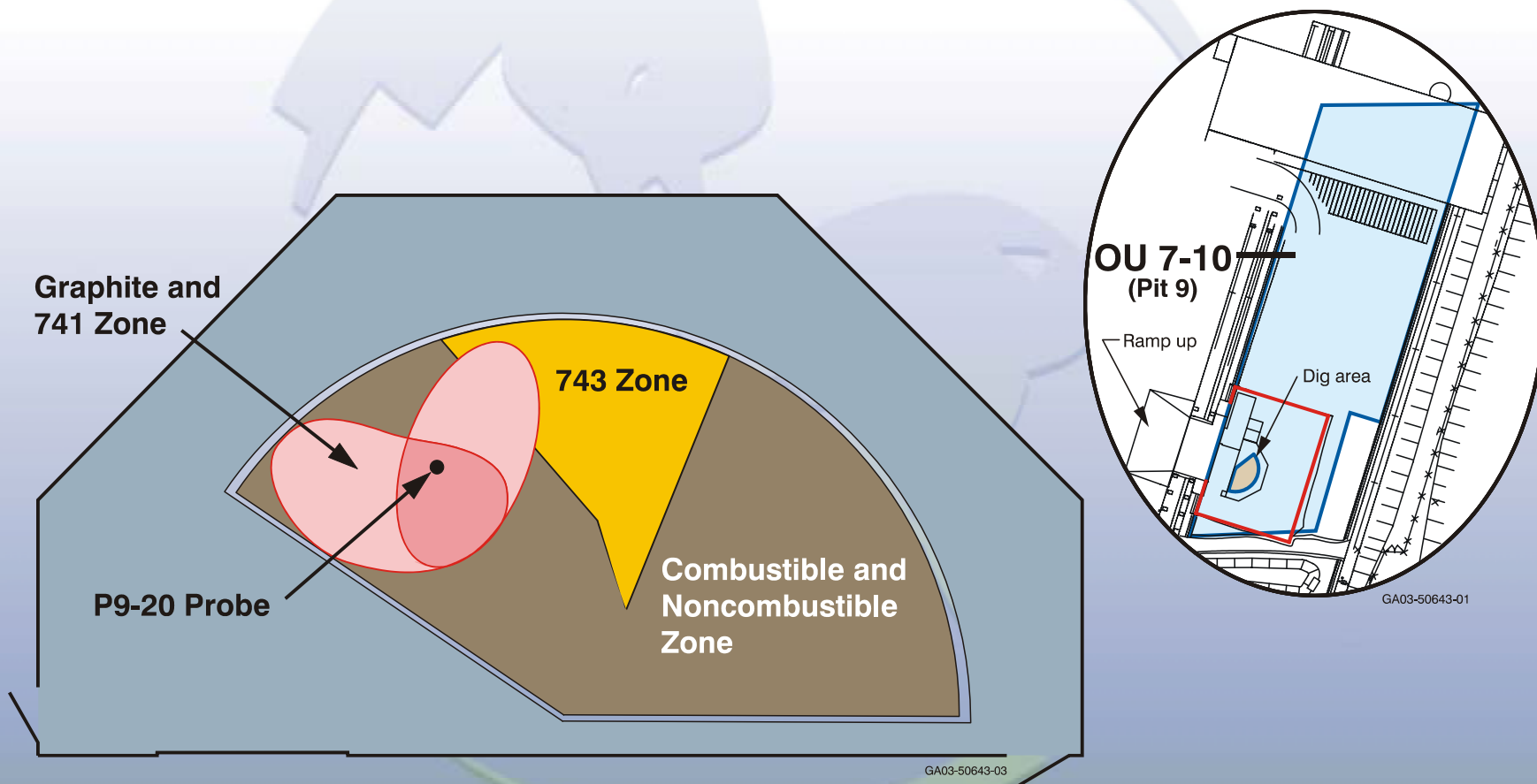
Stage II---Glovebox Excavator Method Facility



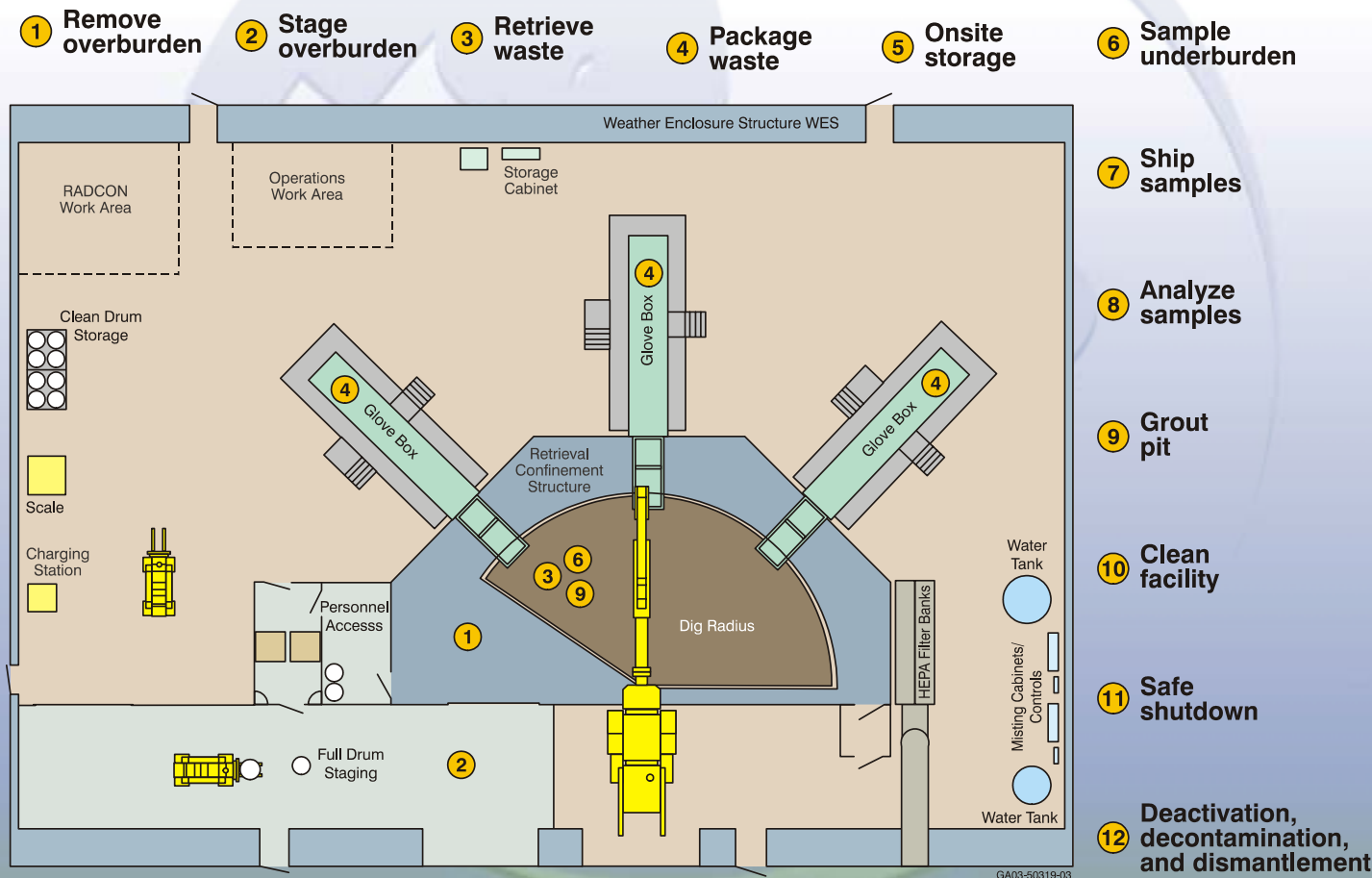
Stage II---Glovebox Excavator Method Facility



Stage II --- Excavation Sequence



Glovebox Excavator Method Steps



GA03-50319-03

GA03-50643-02

Glovebox Excavator Method --- Mockup

Pit 9 Mockup Facility



Glovebox Excavator Method --- Mockup Facility Operation

Video

Glovebox Excavator Method --- Mockup Facility

Features

- *Integrity with respect to the GEM facility*
 - *Full scale configuration*
 - *Cold Operability*

Benefits

- *Training*
- *Procedures*
- *Testing*

Glovebox Excavator Method --- Mockup Facility

Engineering Modifications---Safety and Ergonomics

- *Mockup experience generated design changes to improve GEM facility*
 - *Fall protection for Glovebox trolley service*
 - *Drum loadout enclosure*
 - *Hydraulic hose connection hardware*
 - *Re-aligned convenience outlets*

Glovebox Excavator Method --- Mockup Facility

Engineering Modifications---Operations

- *Mockup experience generated design changes to improve GEM facility process improvements*
 - *Overburden removal process*
 - *Full drum lifting equipment*
 - *Improve underburden core sampling technique*

Glovebox Excavator Method --- Mockup Facility

Engineering Modifications---Facility components

- *Mockup experience generated design changes to improve GEM glovebox and facility*
 - *Drum port lid gasket material*
 - *Transfer cart rail shields notched*
 - *Modifications for Decommissioning, Decontamination & Dismantlement*

Noteworthy Practices and Lessons Learned

Topics

- *Construction Features*
- *Packaging Glovebox Features*
- *Noteworthy Project Management Practices*

Noteworthy Practices and Lessons Learned

Construction Features---Fabric Weather Enclosure Structure

- *Fire Protection Equivalency Letter*
- *Vendor issues --- fabric folding error*
- *Ability to hold negative pressure*
- *Door design issue*

Noteworthy Practices and Lessons Learned

Construction Features---Retrieval Confinement Structure (RCS)

- *Design concept---applied to largest building scale*
- *Building Features*

Noteworthy Practices and Lessons Learned

Packaging Glovebox System

- *Issues*
 - *Glove ports size and gloves*
 - *Glass design*
- *Chemical compatibility*
- *Video monitoring*
- *Loadout tents*

Noteworthy Practices and Lessons Learned

Noteworthy Project Management Practices

- *Requirements and Assumptions Documents*
- *Philosophy of Critical Decisions*
- *Risk Management Plan*
- *SAR Process*
- *Acquisition Strategy*
- *Agency Participation*

Path Forward

- *System Operability Testing Completed*
- *Conduct Readiness Process*
 - *Management Self-Assessment*
 - *BBWI Operational Readiness Review*
 - *DOE Line Management Assessment*
 - *DOE Operational Readiness Review*
- *Commence Operations Late September '03*
- *Complete Retrieval Demonstration in 60 Days*

Summary of Noteworthy Practices and Lessons Learned

- *Mockup Facility Features*
- *Construction Features*
- *Packaging Glovebox Features*
- *Project Management Practices*